

## Firwin FAQ – How do I know what insulation thickness is right for my application?

Insulation blankets come in various thicknesses. While for most applications 1" insulation suffices, blankets often are made to 1/2" thick, and can go as high as 4"! What variables need to be considered in order to determine what thickness is right for a given application?

"It really comes down to what is the customer's concern", said Brett Herman, Firwin's vice-president of engineering and customer service. "1" thick insulation is standard, and more than sufficient for most applications. If a customer has a particular need, be it to keep in as much heat as possible, to minimize the outer touch temperature, or the heat in a room over than what a standard 1" blanket would accomplish, then we would look into thicker insulation".

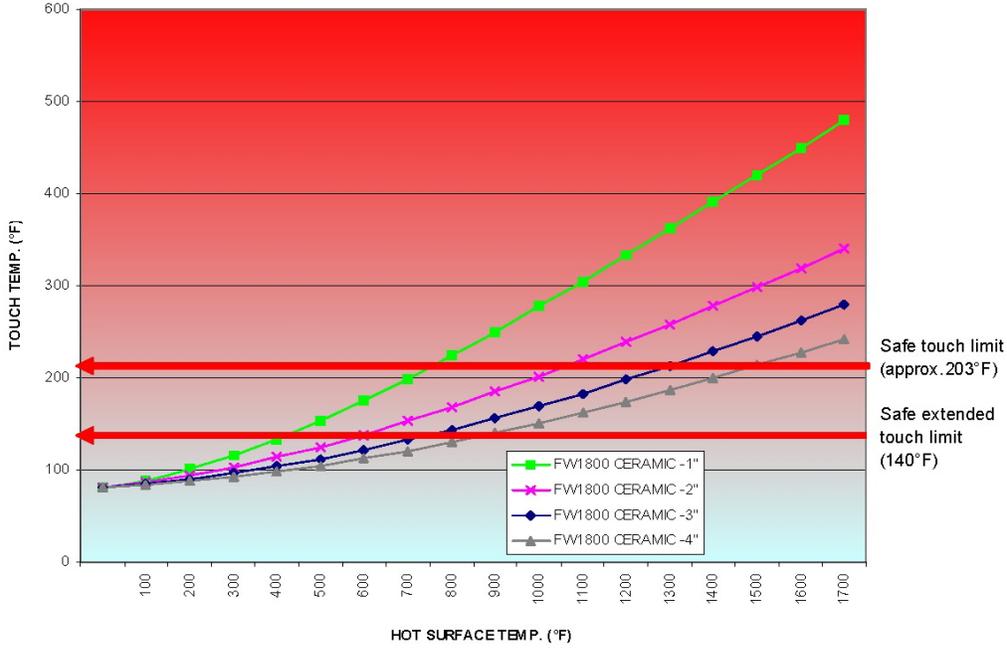
An example of where Firwin will often recommend 2" thick insulation is SCR applications, where maintaining high exhaust heat is crucial to the SCR's performance. For insulation to be thinner than 1", the reason is often because of lack of clearance to allow for 1", or where the pipes are simply quite small.

There are a number of variables that affect blanket thickness - among them ambient temperature, air flow velocity, insulation material, amount of heat generated, and emissivity. "We have a rule of thumb for certain applications", said Brett. "For instance, for power generation, in a prime power application, where the engine is running more or less constantly, we will typically recommend 2" thick blankets; while a back-up power application, which runs periodically, would typically only require 1" thick insulation. But again, since there are a number of variables which can come into play, every case needs to be evaluated ", added Brett.

What about going as thick as 3" or 4"? "As you go to thicker insulation, the returns, as far as heat retention or lower surface temperature, diminish", notes Brett. "Also, insulation blankets thicker than 2" can get expensive, not only because there is so much more material being used, but because of the added complexity of constructing blankets at such thicknesses". Click on the chart below to view the performance of insulation blankets at various thickness.

### TYPICAL TOUCH TEMPERATURES 1"-4" COMPARISON

(80°F Ambient. No wind.)



In summary, most applications are best suited to 1" thick insulation. If a customer has a particular need where he feels that 1" might not suffice, Firwin should be contacted and will be happy to do an evaluation, as there are indeed cases where alternative thickness is more appropriate.